

## **REMARKS**

Claims 1-5, 7-15, 17-25 and 27-30 are pending in the present application. Claims 1, 4, 5, 7-9, 11, 14, 15, 17-19, 21, 24, 25 and 27-29 have been amended, and Claims 6, 16 and 26 have been cancelled, herewith. Reconsideration of the claims is respectfully requested.

Amendments were made to the specification to correct errors and to clarify the specification. No new matter has been added by any of the amendments to the specification.

Also, applicants have submitted Replacement Sheets for Figures 1, 11 and 14.

Applicants would also like to thank the Examiner for taking the time to conduct a telephonic interview on December 5, 2005. While no agreement was reached, Applicant discussed the difference between virtual and physical connection unit pairs, and how their use improved performance when links established and re-established. Applicants also agreed to provide a claim amendment to better distinguish the claimed virtual connection unit pair from a software device driver for the hardware queue pairs as taught by the cited Bailey reference.

### **I. Objection to Drawings**

The Examiner objected to the drawings as failing to comply with 37 CFR 1.84(p)(5) because they include reference characters not mentioned in the description. Applicants have amended the Specification herewith to include some of the identified reference characters, and are submitting concurrently herewith replacement sheets for Figures 1, 11 and 14 to delete some reference characters. It should also be noted that reference characters 1570 and 1550, which are indicated as not being referenced in the present Specification, are in fact referenced in the present Specification at page 39, lines 7 and 17, respectively.

Therefore, the objection to the drawings has been overcome.

### **II. Objection to Specification**

The Examiner objected to the abstract as exceeding 150 words in length. Applicants have amended the abstract herewith to not exceed 150 words in length.

The Examiner objected to the disclosure due to various informalities. Applicants have amended the disclosure herewith to correct such identified issues.

Therefore, the objection to the Specification has been overcome.

### III. 35 U.S.C. § 103, Obviousness

A. The Examiner rejected Claims 1-3, 11-13 and 21-23 under 35 U.S.C. § 103 as being unpatentable over Bailey et al. (USPN 6,832,310) in view of Erimli et al. (USPN 6,480,500). This rejection is respectfully traversed.

With respect to Claim 1, it is respectfully submitted that none of the cited references teach or suggest the claimed *virtual connection unit pairs*. In rejecting the claimed step of “allocating a virtual connection unit pair to the connection, the virtual connection unit pair being associated with the first node”, the Examiner cites Bailey’s teaching at col. 3, lines 57-60 as teaching such virtual connection unit pair allocation. Applicants urge that this cited passage states:

“Additionally, process 100 may generate instructions to move data from one location in memory 200 to an additional memory located on another node”

This passage describes a portion of Bailey’s Fig. 2, and describes a data move operation from one memory to another. There is no mention of any type of allocation step, and in particular there is no mention of any allocating of a virtual connection unit pair to a connection. Rather, a simple data move operation is described. Thus, it is urged that the Examiner has failed to properly establish a prima facie showing of obviousness, as there are missing claimed steps not taught or suggested by any of the cited references.

It is further urged that Bailey describes allocation of a queue pair at col. 3, lines 63-65, but there is no mention, teaching or other type of suggestion that such queue pair is a virtual queue pair or a virtual connection unit pair. Rather, this is a physical queue pair. It is also noted that while Bailey describes a virtual address at col. 4, lines 43-45, this virtual address is with respect to a next work queue element to be serviced by the hardware channel adapter, and is not any type of address, virtual or otherwise, with respect to a *queue pair* or *connection unit pair*. It is thus urged that the cited Bailey reference does not teach or suggestion any step of allocating a virtual connection unit pair to a connection, as expressly recited in Claim 1.

In any event, Applicants have amended Claim 1 to further highlight and distinguish Claim 1 from the teachings of the cited references. As depicted in the preferred embodiment at Figure 14 and described in the Specification at page 37, lines 17-27, when a virtualized queue

pair (or end-to-end contexts) is allocated to a connection, that virtualized queue pair is associated with a physical queue pair that is used for the connection. None of the cited references teach or suggest this claimed feature, which advantageously provides an ability to re-use the physical queue pair and connection notwithstanding that the virtual queue pair has a status of time-wait state due to an in-process connection disconnect (Specification page 39, lines 19-29). It is thus urged that the amendment to Claim 1, in combination with the missing claimed features identified above, has overcome the 35 USC 103 rejection of such claim.

Still further with respect to Claim 1, Applicants have amended such claim to include features originally recited in Claim 6 (which is thus being cancelled herewith without prejudice or disclaimer. As amended, Claim 1 includes the feature of “tearing down the connection between the first node and the second node, wherein tearing down the connection includes placing the virtual connection unit pair in a time-wait state”. In rejecting Claim 6, whose features are now included in Claim 6, the Examiner rejected Claim 6 in stating that the feature recited in Claim 6 is admitted prior art, cited the present Specification at page 2, line 27 – page 3, line 9. Applicants urge that this cited passage is with respect to physical connection unit pairs, and not virtual connection unit pairs as expressly recited in Claim 1. The additional amendment to Claim 1 as discussed above further emphasizes this distinction between physical and virtual, and thus it is urged that these two amendments to Claim 1 clearly distinguish these claims features from the alleged admitted prior art. Thus, it is further urged that amended Claim 1 is not obvious in view of the cited references.

With respect to Claims 2 and 3, Applicants traverse for reasons given above with respect to Claim 1 (of which Claims 2 and 3 depend upon).

Applicants traverse the rejection of Claims 11-13 and 21-23 for similar reasons to those given above with respect to Claim 1.

Therefore, the rejection of Claims 1-3, 11-13 and 21-23 under 35 U.S.C. § 103 has been overcome.

**B.** The Examiner rejected Claims 5, 15 and 25 under 35 U.S.C. § 103 as being unpatentable over Bailey et al. (USPN 6,832,310) in view of Erimli et al. (USPN 6,480,500) as applied to claims 1, 11, and 21 above, and further in view of Khalidi et al. (USPN 6,405,237). This rejection is respectfully traversed.

Applicants initially traverse such rejection for similar reasons to those given above with respect to Claim 1.

In addition, Applicants have amended such claims to clarify and distinguish the claimed physical connection unit pair from Bailey's teachings of hardware registers, which are not queues that are used to access the connection.

Therefore, the rejection of Claims 5, 15 and 25 under 35 U.S.C. § 103 has been overcome.

**C.** The Examiner rejected Claims 6-9, 16-19 and 26-29 under 35 U.S.C. § 103 as being unpatentable over Bailey et al. (USPN 6,832,310) in view of Erimli et al. (USPN 6,480,500) as applied to claims 1, 11 and 21 above, and further in view of Applicant's Admitted Prior Art. This rejection is respectfully traversed.

Claims 6, 16 and 26 have been cancelled herewith, without prejudice or disclaimer, as the features of these claims have now been incorporated into respective independent Claims 1, 11 and 21.

Applicants traverse the rejection of Claims 7-9, 17-19 and 27-29 for similar reasons to those given above with respect to Claim 1.

Therefore, the rejection of Claims 7-9, 17-19 and 27-29 under 35 U.S.C. § 103 has been overcome.

**D.** The Examiner rejected Claims 10, 20 and 30 under 35 U.S.C. § 103 as being unpatentable over Bailey et al. (USPN 6,832,310) in view of Erimli et al. (USPN 6,480,500) in further view of Khalidi et al. (USPN 6,405,237) as applied to claims 5, 15, and 25 above, and further in view of Applicant's Admitted Prior Art. This rejection is respectfully traversed.

Applicants traverse such rejection for similar reasons to those given above with respect to Claims 1 and 5.

Therefore, the rejection of claims 10, 20 and 30 under 35 U.S.C. § 103 has been overcome.

**IV. Objection to Claims**

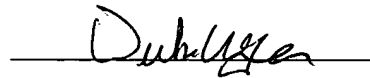
The Examiner stated that Claims 4, 14 and 24 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. In response, the claims have been rewritten accordingly to overcome this objection.

**V. Conclusion**

It is respectfully urged that the subject application is patentable over the cited references and is now in condition for allowance. The Examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the Examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

DATE: December 6, 2005

Respectfully submitted,



Duke W. Yee  
Reg. No. 34,285  
Wayne P. Bailey  
Reg. No. 34,289  
Yee & Associates, P.C.  
P.O. Box 802333  
Dallas, TX 75380  
(972) 385-8777  
Attorneys for Applicants